

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
3 November 2005 (03.11.2005)

PCT

(10) International Publication Number
WO 2005/102581 A1

(51) International Patent Classification⁷: **B23K 9/00**, 9/007

(21) International Application Number:
PCT/US2005/014036

(22) International Filing Date: 22 April 2005 (22.04.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/564,763 23 April 2004 (23.04.2004) US

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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only

Published:

— with international search report
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD OF REPAIRING A RAIL

(57) Abstract: A system or method of repairing railroad rails which includes a head, upright and base sections. The method includes at least the following steps: identifying and locating a defect in the rail, removing the defect by removing material from the rail surrounding the defect in at least the head section so as to form a void and a rail void interface while maintaining continuity of the rail, filling the void with molten metal having a high carbon content and causing the molten metal and the rail void interface to bond. The molten metal may be produced by gas shielded arc welding. The carbon content of the molten metal is near that of the rail to decrease carbon migration from the rails. High carbon welding electrode is used in the welding of high strength steel using gas shielded arc welding techniques whereby a plurality of beads of molten weld material join together rail ends or fill a slot in a rail for repair purposes, the high carbon electrode avoiding adjacent soft and brittle areas across a weld fusion line which result from migration of carbon from the carbon rich high strength steel to the lower carbon weld deposit.

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